

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 29687		Date of mailing (day/month/year) 23 MAR 2006 FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/IL05/00572	International filing date (day/month/year) 01 June 2005 (01.06.2005)	Priority date (day/month/year) 01 June 2004 (01.06.2004)
International Patent Classification (IPC) or both national classification and IPC IPC: Please See Continuation Sheet USPC: 382/124,154,285;345/419;356/12;348/42;359/462		
Applicant V-TARGET TECHNOLOGIES LTD.		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 14 February 2006 (14.02.2006)	Authorized officer Aaron W. Carter Telephone No. (703)305-4700
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IL05/00572

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>4-6, 13-25</u>	YES
	Claims <u>1-3, 7-12, 26-40</u>	NO
Inventive step (IS)	Claims <u>4-6, 13-25</u>	YES
	Claims <u>1-3, 7-12, 26-40</u>	NO
Industrial applicability (IA)	Claims <u>1-40</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet

**WRITTEN OPINION OF THE
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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 4-6 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 4 indefinite for the following reason(s):

As to claim 4, the limitations "the pharmaceutical" and "the measurement" in line 3 lacks antecedent basis.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of IPC:

G06K 9/00(2006.01),**9/36**(2006.01);**G06T 15/00**(2006.01),**17/00**(2006.01);**H04N 13/00**(2006.01),**15/00**(2006.01);**G01C 3/14**(2006.01)

V. 2. Citations and Explanations:

Claims 1-3, 7-12 and 26-40 lack novelty under PCT Article 33(2) as being anticipated by US 2002/0085748 to Baumberg.

As to claim 1, Baumberg discloses a method for selecting a set of optimal views of a volume to be imaged, comprising:
Providing said volume to be imaged (paragraph 0038, wherein subject object corresponds to volume to be imaged);
Providing a collection of views of said volume to be imaged (paragraph 0038);
Providing a scoring function, by which any set of at least one view from said collection is scorable with a score that rates information obtained from said volume by said set (paragraph 0059, wherein weight determination module corresponds to scoring function);
Forming sets of views and scoring them, by said scoring function (paragraph 0059); and
Selecting a set of views from said collection, based on said scoring function (paragraph 0060 and 0117).

As to claim 2, Baumberg discloses the method of claim 1, wherein each of said views is associated with viewing parameters comprising a detector location and orientation (paragraph 0038).

As to claim 3, Baumberg discloses the method of claim 1, wherein each of said views is associated with viewing parameters selected from the group consisting of :

Detector material, detector thickness, septa thickness, and collection angle (paragraph 0038, wherein orientation corresponds to collection angle).

As to claim 7, Baumberg discloses the method of claim 1, wherein said selecting is to obtain a minimal-size set which attains a predefined score (paragraph 0112).

As to claim 8, Baumberg discloses the method of claim 1, wherein said selecting is to obtain a highest scoring set having a predefined number of views (paragraph 0112).

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

As to claim 9, Baumberg discloses the method of claim 1, wherein said collection of views comprises a quantized continuum of views (paragraph 0038).

As to claim 10, Baumberg discloses the method of claim 1, wherein said scoring function comprises an information-theoretic entropy measure, for ensuring uniform coverage of said volume (paragraph 0079).

As to claim 11, Baumberg discloses the method of claim 1, wherein said scoring function comprises a worst-case effectiveness for said given view over said volume (paragraph 0089).

As to claim 12, Baumberg discloses the method of claim 1, wherein said scoring function comprises an average effectiveness for said given view over said volume (paragraph 0090).

As to claim 26, Baumberg discloses the method of claim 1, wherein said selecting comprises:
Initially establishing a current set of views from said collection of views; and
Iteratively expanding said current set until a predefined number of views are obtained, wherein a set expansion iteration comprises (paragraphs 0157-0160):
Forming a respective expanded set for each view not in said current set,
Wherein an expanded set comprises said current set and a respective view (paragraphs 0157-0160);
Calculating a respective score for each of said expanded sets using said scoring function (paragraphs 0159); and
Equating said current set equal to a highest-scoring expanded set (paragraphs 0157-0160).

As to claim 27, Baumberg discloses the method of claim 26, wherein said initially established current set is an empty set (paragraphs 0157-0160).

As to claim 28, please refer to information provided for the limitations of claim 1 above.

As to claim 29, please refer to information provided for the limitations of claim 1 above.

As to claim 30, Baumberg discloses a set selector for selecting a set of optimal views of a volume to be imaged, comprising:
A volume provider, for providing said volume to be imaged (paragraph 0038, wherein subject object corresponds to volume to be imaged);

A view provider, for providing a collection of views for performing radiation detection of said volume (paragraphs 0038 and 0041, wherein colour corresponds to radiation detection);

A scoring functions provider, for providing at least one scoring function, wherein a scoring function is for scoring any set of at least one view from said collection is scorable with a score that rates information obtained from said volume by said set (paragraph 0059, wherein weight determination module corresponds to scoring function);

A sets former associated with said view provider, for using said scoring functions to select a plurality of sets (paragraph 0059); and

A set obtainer associated with said set former, for obtaining a final set of views from said formed sets (paragraph 0060 and 0117).

As to claim 31, please refer to information provided for the limitations of claim 1 above.

As to claim 32, please refer to information provided for the limitations of claim 1 above.

As to claim 33, please refer to information provided for the limitations of claim 1 above.

As to claim 34, please refer to information provided for the limitations of claim 1 above.

As to claim 35, please refer to information provided for the limitations of claim 1 above.

As to claim 36, please refer to information provided for the limitations of claim 30 above.

As to claim 37, please refer to information provided for the limitations of claim 1 above.

As to claim 38, please refer to information provided for the limitations of claim 1 above.

As to claim 39, please refer to information provided for the limitations of claim 1 above.

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As to claim 40, please refer to information provided for the limitations of claim 1 above.

Claims 4-6 and 13-25 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest wherein views are selected from the group consisting of measurement duration, time elapsed from the administration of the pharmaceutical to the measurement, radiopharmaceutical half life, radioactive emission type, and radioactive emission energy.

Claims 1-40 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.